

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-007631**Date Inspected:** 27-Jun-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG and Tower Fabrication**Summary of Items Observed:**

CWI Inspector: Mr. Li Lin.

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

Prior to Caltrans QA Inspectors' concurring with issuance of OBG deck plate closed rib green tag releases a review of the ultrasonic inspection database is performed to verify all closed rib tack weld repair locations have been ultrasonically accepted. Today this QA Inspector, Mr. Paul Dawson, performed data entry of ultrasonic inspection information from the field generated Ultrasonic inspection data sheets onto the common drive computer database for the following OBG deck panels: DP156-001 and DP102-001.

**Tower Bay 11**

The QA Inspector observed ZPMC welder Mr. Dong Chang Xi, stencil 070046 is using flux cored welding procedure WPS-B-T-2332-TC-P5-F to make East Tower Lift 4 Skin B stiffener to skin plate weld ESD1-FBSA4-2A/C-069. The QA Inspector observed a welding current of approximately 300 amps and 28.6 volts and the base material appears to be between 110°C and 230°C. The QA Inspector observed Quality Control Certified Welding Inspector Mr. Li Lin monitoring this welding. Items observed on this date appeared to generally comply with applicable contract documents.

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## WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

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The QA Inspector observed ZPMC welder Mr. Li Liang, stencil 070212 is using flux cored welding procedure WPS-B-T-2332-TC-P5-F to make East Tower Lift 4 Skin B stiffener to skin plate weld ESD1-FBSA4-2A/C-070. The QA Inspector observed a welding current of approximately 370 amps and 28.6 volts and the base material appears to be between 110°C and 230°C. Quality Control Certified Welding Inspector Mr. Li Lin monitoring this welding and he informed this QA Inspector that the welding current is too high and that he will have Mr. Li Liang adjust the welding machine to a lower welding current. After the welding machine was adjusted this QA Inspector measured a welding current of approximately 335 amps. Items observed on this date appeared to generally comply with applicable contract documents.

The QA Inspector observed ZPMC welder stencil 069043 is using flux cored welding procedure WPS-B-T-2332-TC-P5-F to make East Tower Lift 4 Skin B stiffener to skin plate weld ESD1-FBSA4-2A/C-069. The QA Inspector observed a welding current of approximately 330 amps and 31.0 volts and the base material appears to be between 110°C and 230°C. The QA Inspector observed Quality Control Certified Welding Inspector Mr. Li Lin monitoring this welding. Items observed on this date appeared to generally comply with applicable contract documents.

The QA Inspector observed ZPMC welder Mr. Shi Jiabao, stencil 068494 is using flux cored welding procedure WPS-B-T-2332-TC-P5-F to make East Tower Lift 4 Skin B stiffener to skin plate weld ESD1-FBSA4-2A/C-070. The QA Inspector observed a welding current of approximately 320 amps and 32.0 volts and the base material appears to be between 110°C and 230°C. The QA Inspector observed Quality Control Certified Welding Inspector Mr. Li Lin monitoring this welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Qi Huanhuan, stencil 067184 is using flux cored welding procedure WPS-B-T-4332-TC-P5-F to make East Tower Lift 4 Skin B stiffener to skin plate weld ESD1-FBSA4-2A/C-064. This QA Inspector observed a welding current of approximately 310 amps and 30.5 volts and the base material appears to be between 110°C and 230°C. This QA Inspector observed Quality Control Certified Welding Inspector Mr. Li Lin monitoring this welding. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Zhang Xin Min, stencil 064484 is using flux cored welding procedure WPS-B-T-2332-TC-P5-F to make East Tower Lift 4 Skin B stiffener to skin plate weld ESD1-FBSA4-2A/C-063. This QA Inspector observed a welding current of approximately 310 amps and 30.5 volts and the base material appears to be between 110°C and 230°C. This QA Inspector observed Quality Control Certified Welding Inspector Mr. Li Lin monitoring this welding. Items observed on this date appeared to generally comply with applicable contract documents.

OBG Bay 1

ZPMC issued "Inspection Notification Sheet" number 3527 informing QA that ZPMC has completed ultrasonic inspections of OBG cross beam #7 welds FB205-016-005, FB205-016-006, FB205-016-009, FB205-016-012, FB205-016-025 and FB205-016-026. ZPMC ultrasonic Inspectors had previously accepted all of these welds. This QA Inspector performed random ultrasonic inspections of the welds listed above and items observed by this

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## WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

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QA Inspector appear to comply with AWS D1.5 UT requirements. For additional information on these inspections see the TL6027 Ultrasonic Test Report.

### Blast Shop #2

This QA Inspector, along with QA Inspectors Mr. Gadi Rao and Mr. Larry Viars performed random visual inspections of South Tower Lift 2, interior surfaces between elevation 65 meters and 83 meters. The interior surfaces had recently been sandblasted and the surfaces are now mostly free of rust oxide and other contaminants that had previously obscured portions of the welds. The QA Inspector visually observed approximately eight locations that require grinding or welding to resolve the visual rejections. This QA Inspector obtained digital photographs of some of the rejected locations. This QA Inspector also made a sketch of some of the locations and a copy of the sketch has been placed in the tower visual tracking notebook which has other QA Inspectors' sketches of visual rejection locations. Below are photographs showing two of the areas on the upper diaphragm near skin plate B that this QA Inspector identified as requiring rework.

### Summary of Conversations:

See above.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Dawson,Paul	Quality Assurance Inspector
<b>Reviewed By:</b>	Carreon,Albert	QA Reviewer

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